volume 43/10

# Roundup

SPACE CENTER ROUNDUP

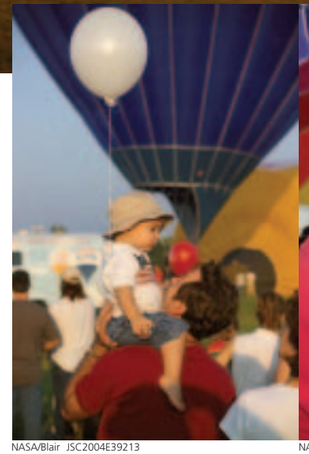
Lyndon B. Johnson Space Center

The Re/Max Ballunar Liftoff Festival took place at Johnson Space Center on August 27-29. The event was a tribute to human flight – from the beauty of hot air balloons to the high-tech world of modern spaceflight. The Ballunar Festival included air balloon competitions, glows, JSC exhibits, entertainment and more. As a part of the festival, the public had the opportunity to visit several NASA buildings on a NASA mini-tour.


NASA/Blair JSC2004E39212

## BALLUNAR FEST!

For more Festival photos, visit:
http://io.jsc.nasa.gov/browser.cfm?catid=2400



NASA/Blair JSC2004E39213

NASA/Schroeder JSC2004E39196


NASA/Markowitz ISS010-S-002

# Changing of the guard

Exploration and discovery aboard the International Space Station will continue with this month's launch of the Expedition 10 crew. Astronaut Leroy Chiao, left, is the mission's commander and NASA ISS science officer, while Cosmonaut Salizhan Sharipov, representing Russia's Federal Space Agency, is the flight engineer.

*For more on Expedition 10, see page 10.*

October 2004
Houston, Texas

Space Center Roundup

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# Guest column...

## *Leadership*

We have a tremendous challenge in front of us. We are experiencing a whirlwind of change right now within human spaceflight, and the JSC team is right in the thick of it.

We are being bombarded with transformation, changing our culture, fulfilling the Vision for Space Exploration, returning to flight safely, and completing the International Space Station. While at the same time, we continue to support real-time operations in space and deal with devastating blows from Mother Nature. It's enough to make mere mortals crumble under the pressure. But we're not mere mortals, we're NASA. The JSC team is used to carrying the weight of human spaceflight on our shoulders. We love a challenge. We know how important our success is to the future of our country and, for that matter, all human kind, and we rise to the occasion.

As an organization, we are the leaders, the experts in human spaceflight operations, and through our leadership, we are going to meet the challenges in front of us.

But leadership has its responsibilities. Through surveys and events like our Safety & Mission Success week, you have told us what you need from your leadership team. We have listened, and we are working hard to meet our obligations to you.

As a result of the Safety & Mission Success week, a new NASA/industry partnership has developed. The JSC Joint Leadership Team consists of leadership from NASA and our contractor partners working together to address employee concerns and improve our working relationship.

As leaders, we are committed to embracing and demonstrating behaviors to help us achieve our goals:

**Integrity** – Leaders have total honesty in dealing with the people who work for them, and those for whom they work. Leaders are totally honest in dealing with the resources of their organization and never abuse their position for personal gain.

**Intelligence** – Leaders are intuitive and perceptive decision-makers who can thoroughly analyze a situation or problem and quickly come to the right answer. Leaders know what questions to ask and display technical excellence in all that they do.

**Motivation** – Leaders are driven to excellence.

**Compassion** – Leaders show a genuine understanding of, and care for, the people who work for them. Leaders always put the welfare of their troops above their own.

**Communication** – Leaders clearly communicate the organization's goals and objectives to the people who work for them. Leaders actively listen to their people and are not closed-minded. Leaders seek out diverse opinions and encourage everyone to participate.

Finally, more than any of the technical aspects of our jobs, the people are what really matter. Look out for one another, take care of your families, take care of the people who work for you, and care for your coworkers. If we are genuinely concerned for one another, everything else will fall into place. If we truly care for the people who work for us and with us, then they will take care of the organization and we will all have a sense of pride and accomplishment as a member of the best team going.

Change and the unknown are difficult for all of us. You deserve strong leaders who listen to you and demonstrate their commitment, integrity and compassion on a daily basis.

Together we will overcome the challenges we face. And together we will continue to excel in this great adventure called human space exploration.

Bob Cabana
Deputy Director

JSC JOINT LEADERSHIP TEAM UPDATE

# Turning vision into reality

The Johnson Space Center Joint Leadership Team consists of senior managers from 41 of our contractor companies and JSC senior management. The team was formed in response to employee concerns about leadership and culture raised during NASA's Safety and Mission Success Week in November 2003.

The team is working hard to address three central concerns that you identified. These are:

- Enhancing leadership effectiveness – to foster a leadership culture of trust and respect
- Improving management processes – to improve the decision-making tools of our trade
- Improving the effectiveness of contractor/civil servant communications and relationship – to address communications and organizational relationships

Together, we are making progress. Key accomplishments to date include:

**The leadership action team:** is identifying methods that encourage open communication, providing training opportunities to all employees and building a shared leadership culture within our community.

**The management processes team:** is developing a well-defined decision-making process and providing training to help decision-makers, clearly defining paths for alternative opinions, and working to ensure open, honest and effective communication in support of decision making.

**The contractor/civil servant relationships team:** is working to ensure open communications and mutual understanding in civil servant and contractor relationships including the contracting process, working relationships and workplace environment.

Dreams, Hopes, Realities by Pat Rawlings/SAIC

With these efforts, we are improving our understanding of the issues and concerns for all of our employees. We are sharing best practices with the goal of unlocking our full potential, and we have opened new lines of communication across our team.

We are committed to continuing this collaboration and sharing the results with you on a regular basis. Embracing the values of Safety, NASA Family, Excellence and Integrity, we will make this effort relevant and beneficial for each of our employees.

For more information and detail, visit our Website at: **http://ird.jsc.nasa.gov/sms/**

by Joanne Hale

# Genesis

Courtesy JPL

*Genesis team specialists are beginning the process of conducting inventory of the contents of the craft's science canister. The team is handling the canister and the sample return capsule in a methodical manner. The canister is inside a clean room at the U.S. Army Dugway Proving Ground, Utah.*

**NASA's Genesis spacecraft came back to Earth on Sept. 8 at 9:52:47 MDT at the U.S. Air Force Test and Training Range, Dugway Proving Ground, southwest of Salt Lake City right on schedule. However, the Genesis capsule, as a result of its parachute not deploying, impacted the ground at a speed of 193 mph. The impact that occurred near Granite Peak on a remote portion of the range did not result in any injuries to people or structures.**

The Genesis capsule – carrying the Agency's first sample return since the final Apollo lunar mission in 1972, and the first material collected beyond the Moon – was originally designed to deploy a drogue parachute at an altitude of 108,000 feet. Six minutes later, the main parachute, a parafoil, would deploy enabling two helicopters and their flight crews to make a midair retrieval of the capsule and bring it safely to Earth.

By the time the capsule entered Earth's atmosphere, the flight crews tasked to capture Genesis were already in the air. Once it was confirmed the capsule touched down out on the range, the flight crews were guided toward the site to initiate a previously developed contingency plan. They landed close to the capsule and, per the plan, began to document the capsule and the area.

*We are pleased and encouraged by the preliminary inspection.*

Sean O'Keefe

"We have the capsule,"Genesis Project Manager Don Sweetnam of NASA's Jet Propulsion Laboratory, Pasadena, Calif. said. "It is on the ground. We have previously written procedures and tools at our disposal for such an event. We are beginning capsule recovery operations at this time."

The canister was subsequently moved to a clean room at the U.S. Army Dugway Proving Ground where Genesis team specialists immediately began the process of conducting inventory of the contents of the craft's science canister. Once the inventory is completed, the materials will be transferred to Johnson Space Center as originally planned.

Scientists, who conducted the preliminary assessment of the Genesis canister, say they are encouraged by what they see. They say they believe it may be possible to achieve the most important portions of their science objectives.

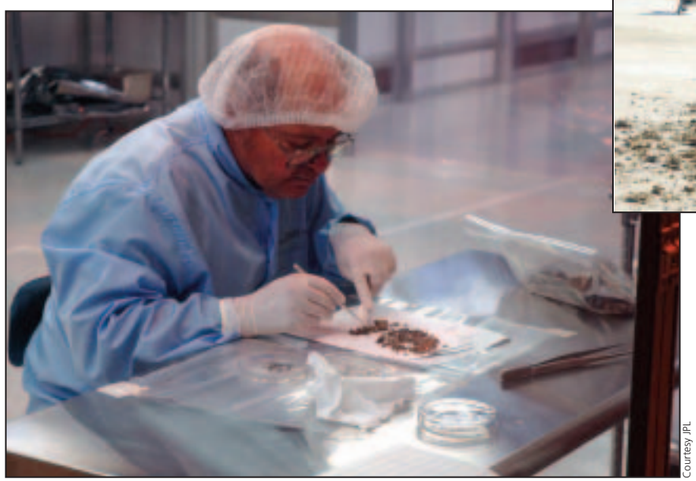
"We are bouncing back from a hard landing, and spirits are picking up again," Orlando Figueroa, deputy associate administrator for Programs for the Science Mission Directorate at NASA Headquarters in Washington said.

"This may result in snatching victory from the jaws of defeat," Dr. Roger Wiens of the Los Alamos National Laboratory, a member of the Genesis science team, said. "We are very encouraged."

The Genesis mission was launched in August 2001 to capture samples from the storehouse of 99 percent of all the material in our solar system – the Sun. These samples of solar wind particles, collected on ultra-pure wafers of gold, sapphire, silicon and diamond, could provide scientists with vital information on the composition of the Sun, which could in turn shed light on the origins of our solar system.

Based on initial inspection of the canister, it is possible a repository of the solar wind materials may have survived that will keep the science community busy for some time.

"We are pleased and encouraged by the preliminary inspection," NASA Administrator Sean O'Keefe said. "The outstanding design and sturdy construction of Genesis may yield the important scientific results we hoped for from the mission," he said.



Courtesy JPL

Courtesy JPL

*The Genesis sample return capsule landed well within the projected ellipse path in the Utah Test and Training Range on Sept. 8, but its parachutes did not open. Scientists who conducted the preliminary assessment of the Genesis canister are encouraged by what they see. The team continues its meticulous work and believes that a significant repository of solar wind materials may have survived that will keep the science community busy for some time.*

THE COMBINED FEDERAL CAMPAIGN

# Changing Lives

by Joanne Hale

With a tradition of commitment to the community through the selfless efforts of federal employees, the Combined Federal Campaign (CFC) has its roots in the many charitable campaigns of the early 1960s. Seeing a need to bring the diversity of fund-raising efforts under one umbrella, federal employees created the CFC. It is one campaign, once a year.

By allowing employees to select the organizations of their choice from a single brochure and to make their contributions through payroll deductions, the CFC opened wide the door to more opportunities for generous giving to literally hundreds of worthy causes.

"Once again, it's that time of year when we kick-off the Combined Federal Campaign," Johnson Space Center Deputy Director Bob Cabana said. "We've shown time and again how we take care of our own in times of need and we are definitely blessed to be part of the 'NASA family.' The CFC is an excellent opportunity to use that caring spirit that we have to give something back to our community and help take care of those who are less fortunate than us."

The CFC is a designation campaign, which means a person can designate a donation to one specific charity or as many as five different charities. There are more than 1,800 local, national and international charities listed in the CFC Agency Guide.

"I encourage each of you to examine the many ways you can make a difference in the lives of those around you, your community and your country," Jefferson D. Howell, Jr., JSC center director, said. "With your ongoing support, I am confident that together we can continue to make a difference by giving generously to this year's Combined Federal Campaign."

The JSC CFC campaign runs from Sept. 27 through Nov. 8. The Centerwide goal this year is $600,000.

"Giving to the CFC is very personal for me. I lost my mother to cancer and my wife's mother to Alzheimer's, two organizations I have gladly contributed to in the past," Bob Fitzmaurice, education programs specialist and NASA CFC loaned executive-Gulf Coast region, said. "My adult son was recently diagnosed with Type 1 Diabetes, so my contribution this year will go to the American Diabetes Association. When serious illness hits home, it brings into focus what needs to be done. Contributing to the research and development of these problems is money well spent."

All employees at JSC – contract, federal and military – plus JSC retirees may participate with a one-time gift by cash or check (made payable to the CFC). In addition, federal employees may contribute through payroll deductions that would take effect in January 2005. Last year, the JSC family demonstrated their generous One NASA spirit by contributing $630,000.

"The CFC is a fantastic way to reach out to those less fortunate and give them just a little help when they need it," Joel Walker, director of center operations, said. "The number and variety of worthy charities is just incredible, and the process to designate a gift is really simple. The hardest part for me is deciding which charities I will support. As I live each year, I continue to encounter the work of these wonderful agencies, and it really is amazing how much good work is done from the gifts we give."

JSC has more than 80 organization canvassers from across the Center working with JSC CFC Chair Truda Furr to help make this opportunity available. "This year's theme 'Every 1 of Us' reflects the NASA team spirit and reminds us that it truly takes every one of us to reach our goal," Furr said. "Reaching our goal is a success we can all take pride in, knowing we have given back to the community and helped those who are in need."

Contact your organization's coordinator or canvasser for pledge cards and further campaign information, and be sure to ask about the drawings for parking spots. Your CFC committee is trying once again this year to have the money/donations you give go where they are needed.

continued on page 8

A MESSAGE FROM

## Bill Parsons

Yes, it's time again to kick off the annual Combined Federal Campaign (CFC). Each of us is so fortunate to be a member of the NASA family, and to be a part of the noble endeavor of human spaceflight.

Last year our NASA family suffered a great loss. Very few of us expected to be in a situation where we needed an outpouring of support and compassion from the East Texas communities. Yet, it was through such charity and commitment that we were able to identify the cause of the *Columbia* accident and move forward. Since that time, we have been doing the work that will enable us to safely return to flight.

Many of the organizations that helped us during our time of need receive funding from the CFC. Choosing where your money goes, from national to state to hometown organizations, is the ultimate form of giving. If we support CFC, the money is already there and ready to help people. Hurricane Charley recently hit Florida – a place where many of us have lived or visited – and dozens of agencies rushed to aid the victims. Their ability to help was by a large extent influenced by CFC contributions.

I believe that just as the NASA Team is earnestly building grassroots support for the Vision for Space Exploration, these organizations also need our support to accomplish their tasks. I highly encourage you to choose some worthy groups and give generously. Please take the time to fill out your donation form, and remember: how much you give is not nearly as important as your participation.

# CFC

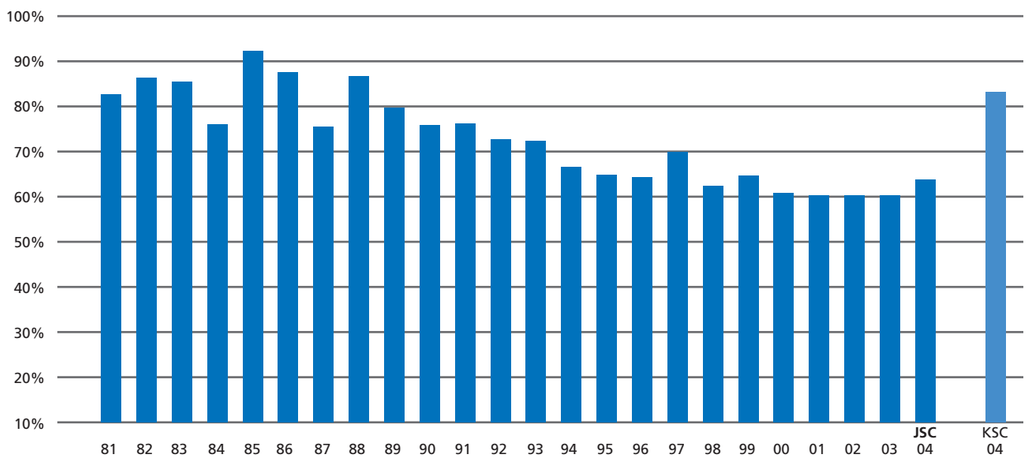
"JSC has consistently met our goal in total dollars to the campaign, but our percentage of participation has always left something to be desired," Cabana said. "Let's change that this year. Please take time to fill out your donation form and turn it in. You can even designate what specific organization in the community you want to receive your donation. Remember, it's not how much you give, but that you participate and show your support."

In addition to returning the support NASA received from a number of service agencies during the *Columbia* tragedy, employees never know when they will need such agencies for personal reasons.

"The CFC changes lives, and the need is great," Karl Schuler, acting director of human resources–CFC, said. "Whether it's emergency relief, feeding the hungry, funding medical research or providing other needed services, the CFC ensures that help will be there. As a data point, the average household income in Texas is about $40,000. With our local prosperity comes a great opportunity to help."

**Please visit http://jscpeople.jsc.nasa.gov/cfc/ for more information about JSC's CFC.**

## JSC Combined Federal Campaign Percentage of Participation 1981-2004






*Aerial shot of Chile and Argentina taken in July 2004 EarthKAM session.*

NASA JSC2004E406861

DIGITAL PHOTOGRAPHY

# TAKEN TO NEW HEIGHTS

By Catherine E. Borsché

Imagine having the power to control a digital camera aboard the International Space Station. What would you take pictures of? What geographical features would you want to study?

Controlling an experiment onboard the Space Station is not a fantasy for middle-school students around the globe but, rather, a reality. Thanks to an innovative project called Earth Knowledge Acquired by Middle School Students (EarthKAM), a special Space Station payload enables students to photograph and examine the Earth from a space crew's perspective.

"The main purpose of EarthKAM is to provide teachers and students with the necessary tools to target and acquire images from a space-borne camera," Brion Au, Space Station EarthKAM operations manager, said. "The visual images are then used to supplement textbook and reference data for classroom studies and projects."

To prepare for the experiment, Expedition 9 Commander Gennady Padalka and Science Officer Mike Fincke set up and activate the payload components. The EarthKAM camera is set up to operate from window five in the Zvezda Service Module and the Unity Node nadir hatch window. When the mission run time is complete, the crew shuts down, disconnects and stows the equipment. The crew changes the lens on the camera about midway through the operational period.

Using the Internet, students target areas that they would like to photograph for additional research. Requests are processed by the EarthKAM team at the University of California at San Diego and sent to Johnson Space Center to be uplinked to the Station Support Computer (SSC). The SSC activates the camera at specified times to store the needed images on a hard disk. Once complete, the images are downlinked to Earth for posting on the Internet.

During Expedition 9, two EarthKAM sessions were completed from May 11-14 and July 12-16, yielding new photographs of the Earth. More than 86 schools and over 4,000 students participated in these studies.

However, EarthKAM doesn't just benefit the school system. The program also boasts an extensive image database that in turn aids scientists studying the Earth. Geographical areas are photographed multiple times – providing a visual history of changes.

EarthKAM is operated through the University of California at San Diego, which also maintains the photo collection and Web site and provides education resources. Since the program's creation in 1996, more than 5,000 photos of the Earth have been made available as tools for students, educators and the public.

"No other NASA payload gives students such direct control of an instrument flying on a spacecraft orbiting the Earth," Au said. "And as a result of the targeting and image submittal process, the students assume an unparalleled personal ownership in the study and analysis of their Earth photographs."

EXPEDITION 10

# AT A GLANCE

## Crew

Astronaut Leroy Chiao will serve as commander and NASA Space Station science officer for the Expedition 10 crew. Chiao has previously flown on three Space Shuttle missions, including one dedicated to International Space Station assembly, and conducted four spacewalks. Chiao has logged more than 36 days in space and a total of 26 hours and 19 minutes of spacewalking time.

Cosmonaut Salizhan Sharipov will serve as the Soyuz commander and Space Station flight engineer for Expedition 10. Sharipov, a colonel in the Russian Air Force, has previously flown on one Space Shuttle mission. He has logged more than 950 hours of flying time and more than eight days in space.

Yuri Shargin, a lieutenant-colonel in Russia's Space Forces, will fill the third seat in the Soyuz with the Expedition 10 crewmembers. He will spend eight days aboard the Station conducting scientific experiments before returning to Earth with the Expedition 9 crew. Shargin is a test cosmonaut making his first flight into space.

## Science

Many experiments from earlier Expeditions remain aboard the Space Station and will continue to benefit from the long-term research platform provided by the orbiting laboratory. These experiments include:

Protein Crystal Growth Single-locker Thermal Enclosure System, which will continue to process crystals that have been growing since Expedition 6. The facility provides a temperature-controlled environment for growing high-quality protein crystals in microgravity, which may contribute to advances in medicine, agriculture and other fields.

Earth Knowledge Acquired by Middle School Students (EarthKAM), an education experiment that allows students to program a digital camera aboard the Station to take pictures of a variety of geographical targets for study in the classroom. (For more on EarthKAM, see page 9.)

NASA/Close JSC2004E24640

NASA/Blair JSC2004E34991

NASA/Blair JSC2004E34992

Investigating the Structure of Paramagnetic Aggregates from Colloidal Emulsions (InSPACE), which seeks to obtain data on magnetorheological fluids – a new class of "smart materials" that can be used to improve or develop new brake systems, seat suspensions, robotics, clutches, airplane landing gear and vibration damper systems.

In addition, the Expedition 10 crew will conduct numerous experiments using the research experiments and tools onboard the Station, including:

- The Human Research Facility, which houses and supports a variety of life sciences experiments, including equipment for lung function tests, ultrasound and many other types of computers and medical equipment.
- The Microgravity Science Glovebox, which has a large front window and built-in gloves to provide a sealed environment for conducting science and technology experiments. The Glovebox is particularly suited for handling hazardous materials when a crew is present.

## Spacewalks

Two spacewalks are planned during Expedition 10. These two spacewalks are designed to continue the external outfitting of the Zvezda Service Module. The primary purpose of the first spacewalk is to install an external workstation and research experiments. The purpose of the second spacewalk is to install cameras, communications gear and navigational aids on Zvezda that will support next year's arrival of the European Space Agency's unpiloted Automated Transfer Vehicle.